

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant: Richard Simons

Serial No. 10/822,882

Filed: April 13, 2004

For: REMOTE TESTING OF HVAC SYSTEMS

Docket No.: H0006930-1161.1163101

Examiner: Aditya S. Bhat

Group Art Unit: 2863


Confirmation No.: 4002

REPLY BRIEF

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 September 15, 2009
Lynn Thompson Date

Pursuant to 37 C.F.R. § 41.41, Appellant hereby submits this Reply Brief in response to the Examiner's Answer mailed on July 20, 2009. Permission is hereby granted to charge or credit Deposit Account No. 50-0413 for any necessary fees.

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A. Claim 39-40 and 42-45 are patentable over Hill et al. (U.S. Patent No. 7,092,794).

Regarding claim 39, nowhere do Hill et al. teach or suggest transmitting a test request to each of the plurality of HVAC systems from the remote location, then performing one or more tests on at least selected ones of the HVAC systems in response to the test request, and producing a test result for each of the selected HVAC systems, and then transmitting the test result for each of the selected HVAC systems to a remote location. The Examiner previously relied on column 2, lines 15-26 as teaching or suggesting the elements of claim 39. Page 11 of the Examiner's Answer asserts "[t]he purpose of the Hill et al. reference is to maintain the HVAC system remotely which includes performing diagnostic function", now citing column 2, lines 59-64. In citing this new passage, the Examiner appears to have mischaracterized the reference. Column 2, lines 59-64 of Hill et al. states:

A user uses entry device 10 to access diagnostic or status information relating to HVAC device 14. Typical users include an individual owner who wishes to change a setpoint, a service technician who wishes to check diagnostic information, or a building supervisor who wishes to control a number of devices. (emphasis added).

As can be seen, this passage of Hill et al. merely suggests accessing or checking information, or changing a setting on an HVAC device. Notably, nothing in this passage teaches or suggests performing one or more tests on at least selected ones of the HVAC systems in response to a test request, as recited in claim 39. Merely accessing information about an HVAC device to receive what appears to be already present status information is clearly not equivalent to performing one or more tests on at least selected ones of the HVAC systems in response to a test request, and in particular, a test request transmitted to the HVAC system from a remote location, as recited in claim 39.

Because Hill et al. clearly does not disclose each and every element of claim 39, the Examiner must be asserting that because Hill et al. relates to maintaining an HVAC system, the reference somehow inherently teaches the specifically recited method steps of: transmitting a test request to each of the plurality of HVAC systems from the remote location, performing one or more tests on at least selected ones of the HVAC systems in response to the test request,

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producing a test result for each of the selected HVAC systems, transmitting the test result for each of the selected HVAC systems to a remote location, storing the test results at the remote location, and identifying which of the HVAC systems will likely need service by analyzing the test results, as recited in claim 39. Appellant submits that there is no basis for interpreting Hill et al. as inherently teaching the specifically claimed method steps based on Hill et al. generically “maintaining” an HVAC system. MPEP § 2112 (IV) states:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

(Emphasis added). Appellant submits that performing one or more tests on at least selected ones of the HVAC systems in response to the test request is clearly not necessarily present in Hill et al., particular in combination with all of the other elements of claim 39. MPEP § 2112.02 further states:

Under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *In re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986).

(Emphasis added). Hill et al. provide no indication that in the normal and usual operation of their system, that all of the claimed method steps would necessarily be performed. Further, as discussed above, the Examiner has not provided any reasoning to support the assertion that Hill et al. inherently and necessarily performs the claimed method steps.

The Examiner then asserts that Hill et al. discloses transmitting a test request to each of

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the plurality of HVAC systems from the remote location, citing column 2, lines 15-21 and FIG.

1. Column 2, lines 15-21 of Hill et al. states:

According to an embodiment of the invention, a method for remotely monitoring and controlling at least one HVAC device includes the steps of (a) providing a server with communications access to an entry device and the at least one HVAC device; (b) querying the at least one HVAC device for status information on a regular basis or when requested by a message from the entry device (emphasis added);

Appellant finds nothing here to suggest Hill et al. discloses transmitting a test request to each of a plurality of HVAC systems from a remote location. Instead, this passage of Hill et al. appears to merely disclose providing a server with communication access to an entry device and an HVAC device, and querying the HVAC device for status information. As discussed above, merely querying for status information cannot be deemed to be the identical method step of transmitting a test request, and then performing one or more tests on at least selected ones of the HVAC systems in response to the test request, and producing a test result for each of the selected HVAC systems, as recited in claim 39. In Hill et al, it appears that already present status information is transmitted in response to a query. In the method of claim 39, an action is initiated and carried out by the HVAC system (performing the requested test) in response to the test request. As can readily be seen, these steps are very different, and provide very different results.

The Examiner appears to be equating the step in Hill et al. of sending status information to the entry device in response to the query as being identical to the claimed step of performing one or more tests on at least selected ones of the HVAC systems in response to the test request, and producing a test result for each of the selected HVAC systems. See the second paragraph on page 11 of the Examiner's Answer. The Examiner thus appears to be asserting that the following steps are identical:

- (1) a second device sending its status information to a first device in response to a query from the first device.
- (2) a second device performing one or more tests on its systems in response to a request from the first device, and the second device producing test results for each

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of its systems.

Appellant submits that one of ordinary skill in the art would clearly understand that these steps are very different, with the first step (Hill et al.) merely involving the transfer of information already present in the HVAC system (its status), while the second step involves the HVAC system initiating and performing a test, which then produces results that were not previously present in the system. The method of claim 39 involves the steps of performing a test which creates test results not previously present in the system. Hill et al., however, appear to merely transmit information between the entry device and HVAC system that was already present in the systems. No test appears to be initiated in Hill et al. in response to the so-called status query. The method steps of Hill et al. thus cannot be deemed to be identical to the method steps recited in claim 39.

On page 12 of the Examiner's Answer, the Examiner asserts that "diagnostics" and "tests" are synonymous, and that Hill et al. thus teach diagnostic/test information is received in response to a question/query/request. Appellant does not dispute that Hill et al. disclose transmitting diagnostic/status information in response to a query. However, Hill et al. clearly do not teach performing a test in response to the test request, and producing a test result, which is then transmitted to a remote location, particularly in conjunction with the other steps recited in claim 39. As discussed above, Hill et al. appear to teach querying and providing diagnostic/status information that would appear to be already present in the Hill et al. system at the time of the query. No additional test appears to be initiated by Hill et al. in response to the query. The quotation from Hill et al. provided by the Examiner clearly indicates that Hill et al. is directed to the transfer of information between the HVAC system and the entry device or server. This portion of Hill et al. appears to disclose providing diagnostic information when messages are sent requesting the diagnostic information. The entire disclosure of Hill et al. appears to be directed to the transfer of information that would appear to be already present in the system. The Examiner's statement that, "[t]his section clearly shows that the diagnostic/test information is received in response to a question/query/request" also clearly indicates that Hill et al. is directed to the transfer of information. Notably, no teaching of actually initiating and performing

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a test in response to a test request is found in Hill et al.

The Examiner then asserts, on page 13 of the Examiner's Answer, that the phrase "test request" can be interpreted as requesting test results, and claim 39 does not recite anything about remote instructions on performing the test, merely a request. Appellant does not understand this assertion. Claim 39 clearly recites the steps of "transmitting a test request", and then "performing one or more tests on at least selected ones of the HVAC systems in response to the test request, and producing a test result for each of the selected HVAC systems." Appellant submits that claim 39 clearly recites the steps of transmitting a test request, and then performing one or more test in response to the test request. Appellant submits that the Examiner's assertion indicates a misreading of the claim.

The Examiner then repeats the assertion that the purpose of Hill et al. is to maintain the HVAC system remotely which includes performing diagnostic function, citing column 2, lines 59-64. As discussed above, this portion of Hill et al. merely discloses the transmission of information between the user at the entry device and the HVAC device. Further, Appellant submits that even if the purpose of Hill et al. is for maintaining the HVAC system remotely, Hill et al. still do not appear to teach the specific method steps recited in the claims. The Examiner appears to be making assumptions regarding steps that could be performed by Hill et al, but that are not disclosed or suggested in the actual reference. Whether or not the system of Hill et al. is capable of performing the claimed steps is not relevant to the current anticipation rejection, which requires an actual disclosure of the steps recited in the claims. Notably, the HVAC system of Hill et al. may periodically perform tests that appear to be initiated by the HVAC system itself, and the remote queries simply retrieve the information/status that resulted from these tests. Surely, this does not require (i.e. inherent disclose) that Hill et al. actually perform a test on at least selected ones of the HVAC systems in response to one of the queries, and then produce a test result for each of the selected HVAC systems, as in claim 39.

On page 14 of the Examiner's Answer, the Examiner asserts that Hill et al. teaches identifying which of the HVAC systems will likely need service by analyzing test results, pointing to column 4, line 65 through column 5, line 15 and FIG. 7 for support. As seen in the

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quote provided by the Examiner, Hill et al. appear to teach messages being provided by the HVAC system regarding the status of various elements, where the messages are updated on a regular basis or upon request from the controller. If anything, Hill et al. may be viewed as identifying which HVAC system might be in need of service by analyzing the status information provided by the system. However, Hill et al. do not appear to teach anything regarding sending a test request, performing that test, producing a test result and analyzing that test result as a basis for identifying which HVAC system will likely be in need of service, as recited in the claim. For at least the reasons set forth above, Hill et al. clearly fail to teach the identical method steps recited in independent claim 39.

Regarding claim 40, the Examiner asserts that the phrase “test request” is not clearly defined in the specification as no specific test is described, thus it is within reasonable interpretation to conclude that querying the different units for power status would require a “power test” and querying the HVAC units for fan speed would require a “fan speed test.” Appellant respectfully disagrees. The specification does provide a clear description of what is meant by “test request”, and also provides examples of specific tests. For example, the specification states:

Figure 10 is another illustrative method for testing an HVAC system for an inside space prior to a heating season, where the HVAC system has a heating component 800. The method starts a block 810. This method includes the steps of activating the heating component even though the HVAC system would not normally call for heat 820. This method further includes the step of determining if the heating component is in compliance with a number of predetermined conditions or parameters 830. The predetermined conditions or parameters can include, for example, flame conditions, heating efficiency, and the like. For example, prior to the heating season (Fall, Winter) or during the cooling season (Summer) a remote self-test can cause the HVAC system (thermostat/controller) to set a temperature parameter in a particular heating zone and activate the heating cycle of the HVAC system. The HVAC system can monitor the HVAC response confirming that the space was heated within a specified time parameter. This sequence can be repeated for all zones within the building. When all zones have been tested, the HVAC system can report the results back to the HVAC contractor, if desired.

Figure 11 is yet another illustrative method for testing an HVAC system

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for an inside space prior to a cooling season, where the HVAC system has a cooling component 900. The method starts at block 910. This method includes the steps of activating the cooling component even though the HVAC system would not normally call for cool 920. This method further includes the step of determining if the cooling component is in compliance with a number of predetermined conditions 930. The predetermined conditions can include, for example, condenser conditions, cooling efficiency, and the like. For example, prior to the cooling season (Spring, Summer) or during the cooling season (Winter) a remote self-test can cause the HVAC system (thermostat/controller) to set a temperature parameter in a particular heating zone and activate the cooling cycle of the HVAC system. The HVAC system can monitor the HVAC response confirming that the space was cooled within a specified time parameter. This sequence can be repeated for all remaining zones within the building. When all zones have been tested, the HVAC system can report the results back to the HVAC contractor, if desired.

Emphasis added; see page 18, line 18 through page 20, line 2. As can be seen, the specification does provide a description of example tests that correspond to the claim phrases “test request” and “performing one or more tests”. The Examiner’s interpretation is not consistent with the specification. Further, Hill et al. do not appear to teach anything regarding a “power test”, “mode test” or “fan speed test” as asserted by the Examiner. The Examiner appears to be asserting that rather than merely recording or noting the current power status, mode status, or fan speed, as Hill et al. appears to teach, the reference somehow discloses initiating and performing specific tests in response to a query for status information. No such teaching is found in Hill et al. Further, the Examiner has not provided any support for the assertion that such tests are inherent in Hill et al. As discussed above, Hill et al. appear to be directed to a method of transmitting status information. Hill et al. do not appear to disclose “providing different test requests” to at least two of the plurality of HVAC systems, wherein each test request identifies a different test to perform”, as recited in claim 40, in combination with the other elements of claim 39. For these additional reasons, claim 40 is believed to be clearly patentable over Hill et al.

Regarding claim 42, the Examiner asserts that Hill et al. teaches an alarm section, and thus it would be within reasonable interpretation for one of ordinary skill in the art to conclude that the device that created the alarm in Hill et al. needs maintenance. Even if Hill et al. teach an alarm system, Hill et al. do not appear to teach the step of scheduling service on at least some of

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the HVAC systems that have been identified as likely needing service, as recited in claim 42. For these additional reasons, claim 42 is believed to be clearly patentable over Hill et al.

Regarding claim 43, the Examiner states that the term “self test” is merely a test performed on a HVAC device in response to a signal. As discussed at length above, Hill et al. do not appear to teach any tests being conducted in response to a signal. For at least the reasons set forth above, Hill et al. fail to teach the identical method steps recited in claim 43. Further, nowhere do Hill et al. appear to teach or suggest transmitting one or more maintenance signals from a remote unit to a specified group of customer HVAC systems, the specified group being a number less than a total number of customer HVAC systems in a customer database, receiving the one or more maintenance signals at each of the HVAC systems, the one or more maintenance signals activating an HVAC component, performing a self-test on the activated HVAC component based on the received one or more maintenance signal, generating self-test result signals from the activated HVAC component based on the self-test performed on the activated HVAC component, as well as the other elements of claim 43. The Examiner has not made any further assertions regarding Hill et al. as teaching the step of activating an HVAC component and performing a self-test on the activated HVAC component based on a received maintenance signal. Appellant has found no such teaching in Hill et al.

Hill et al.’s status information accessing steps are clearly not identical to the steps of transmitting one or more maintenance signals, and performing a self-test based on the received one or more maintenance signal, as recited in claim 43. As detailed above, Hill et al. appears to merely teach accessing what appears to be pre-existing status information of an HVAC system from a remote location. One of ordinary skill in the art would not equate such a step with the claimed steps of actively transmitting a test request or maintenance signal, and in response, performing a test. The Examiner’s interpretation of the claims is inconsistent with the language of the claim, the specification, and with the interpretation that would be reached by one of ordinary skill in the art.

Moreover, nowhere do Hill et al. appear to teach or suggest receiving the one or more maintenance signals at each of the HVAC systems, the one or more maintenance signals

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activating an HVAC component, performing a self-test on the activated HVAC component based on the received one or more maintenance signal, generating self-test result signals from the activated HVAC component based on the self-test performed on the activated HVAC component, as recited in claim 43. Hill et al. do not appear to teach each and every element of independent claim 43, as is required for anticipation. Nor does there appear to be any reason or motivation to modify Hill et al. to arrive at the claimed method. For these and other reasons, claim 43 is thus believed to be clearly patentable over Hill et al.

Regarding claim 44, the Examiner points to Figure 7 of Hill et al. as teaching HVAC units at different locations. Hill et al. does not, however teach the specific steps of transmitting maintenance signals from a remote unit to a specified group, where the group is less than a total number of HVAC systems in a database. While Hill et al. may show status information for various HVAC systems in different locations, Hill et al. does not appear to teach transmitting maintenance signals to only some of these locations. For these additional reasons, claim 44 is believed to be clearly patentable over Hill et al.

Regarding claim 45, the Examiner asserts that Hill et al. teach, in Figure 7, an alarm selection. Hill et al. do not, however, appear to teach the specific method step of “determining which customer HVAC systems from the specified group of customer HVAC systems likely require maintenance based on the self-test signals received by the remote unit”, as recited in claim 45, in combination with the other elements of claim 43. For these additional reasons, claims 45 and 46 are believed to be clearly patentable over Hill et al.

B. Claims 1-20, 29-30, 35-38, and 41 are patentable over Hill et al. in view of AndelmanLelek

Regarding claim 1, the Examiner acknowledges that Hill et al. fail to teach testing the dormant component of an HVAC system, but asserts AndelmanLelek teach that testing an HVAC system in the opposite season is well known in the art.

AndelmanLelek is a proposal for building commissioning services at Ashland High School in support of a design and construction process. The Seasonal Testing paragraph that is

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referenced by the Examiner calls for testing portions of systems that are weather dependent during the opposite season that they were originally installed, where the installation takes place during the “off” season. More specifically, AndelmanLelek states, “[i]f an air handling unit was commissioned during the summer a follow-up test would be performed during the winter for items such as the heating valve and damper controls.” (Emphasis Added). This, however, would appear to teach having the HVAC contractor physically return in the winter to test, for example, a heating valve that was installed in the summer. That is, AndelmanLelek appear to teach in-season testing. AndelmanLelek’s teaching of testing the heating system in the winter would appear to be directly opposite to the method recited in claim 1. More specifically, AndelmanLelek appears to teach that when a heating system is commissioned in the summer, the contractor must come back to test the heating system in the winter (i.e. during the in-season) to verify stability of control.

The Examiner asserts that it should be noted that preventative maintenance is well known in the art (page 25 of the Examiner’s Answer). Regardless of whether preventative maintenance is well known, neither Hill et al. nor AndelmanLelek teach or suggest the specific steps of “receiving a test request from the remote location; performing a test on the dormant component of the HVAC system in response to the test request, and producing a test result, the test including activating the dormant component”, as recited in claim 1. As discussed above, AndelmanLelek teach having a service contractor physically return to the HVAC system in the off season and perform system checks and/or maintenance. Nothing in AndelmanLelek appears to teach or suggest receiving a test request from a remote location, and performing a test on the dormant component that includes activating the dormant component. Hill et al. and AndelmanLelek each fail to teach or suggest the specific method steps recited in claim 1. Additionally, there would appear to be no motivation or other reason for one of ordinary skill in the art to combine or modify their teachings to achieve the claimed method. Claim 1 is thus believed to be clearly patentable over Hill et al. in view of AndelmanLelek.

Regarding independent claims 29, 30, and 35, the Examiner repeats the argument that preventative maintenance is well known in the art and performing a test to ensure the dormant

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HVAC system was functioning properly before the season change to minimize/eliminate service interruption would be obvious to one of ordinary skill in the art. As detailed above, AndelmanLelek teach installing a heater in the summer, and having the contractor return in the winter for in-season testing of the heater for stability and control. At best, AndelmanLelek might suggest installing and commissioning a heater in the summer, with the so-called “off-season” testing being relate to the basic setup that would be performed by the on-site contractor during initial installation. However, such summer testing would clearly be performed by the contractor during installation (i.e. when the contractor is already on site), and thus there would be no reason or motivation whatsoever for an HVAC system to receive a test request that is provided from a location remote from the building, and in response to receiving the test request, activate the heating component at a time when the HVAC system would not normally call for heat, and determine if the heating component is in compliance with a number of predetermined conditions, as recited in claim 29. Not only does the recited combination not result in the specific method steps recited in claim 29, but it does not even make sense since the installer would have ready on-site access to the status information of Hill et al. during the installation process. Hill et al. and AndelmanLelek each fail to teach or suggest the specific method steps recited in claim 29. Additionally, there is no motivation or other reason for one of ordinary skill in the art to combine or modify their teachings to achieve the claimed method. Claim 29 is thus believed to be clearly patentable over Hill et al. in view of AndelmanLelek.

Regarding claim 30, as discussed above, at best, AndelmanLelek might suggest installing and commissioning a heater in the summer, with the so-called “off-season” testing being related to the basic setup that would be performed by the on-site contractor during initial installation. However, such summer testing would clearly be performed by the contractor during installation (i.e. when the contractor is already on site), and thus there would be no reason or motivation whatsoever for a contractor to receive a test request that is provided from a location remote from the building, and in response to receiving the test request, activate the cooling component at a time when the HVAC system would not normally call for cool, and determine if the cooling component is in compliance with a number of predetermined conditions, as recited in claim 30.

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Not only does the recited combination not result in the specific method steps recited in claim 30, but it does not even make sense since the installer would have ready on-site access to the status information of Hill et al. during the installation process. Hill et al. and AndelmanLelek each fail to teach or suggest the specific method steps recited in claim 30. Additionally, there is no motivation or other reason for one of ordinary skill in the art to combine or modify their teachings to achieve the claimed method steps. Claim 30 is thus believed to be clearly patentable over Hill et al. in view of AndelmanLelek.

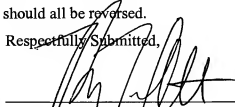
Regarding claim 35, While Hill et al. appear to teach remotely accessing status information regarding an HVAC system, and AndelmanLelek appear to teach having a contractor return and test a heater during the winter (i.e. in-season) when the heater was installed in the summer, neither reference nor their combination teach or suggest the specific method steps of claim 35 including, for example, the steps of transmitting a test request from a remote location, and performing a test on an HVAC component in response to the test request. The Examiner has clearly failed to provide references that teach or suggest each and every element of claim 35, and has not provided articulate reasoning to support the conclusion of obviousness. Claim 35 is thus believed to be clearly patentable over Hill et al. in view of AndelmanLelek.

C. Conclusion

For the reasons stated above, the rejection of claims 39, 40, and 42-45 under 35 U.S.C. §102(e), the rejection of claim 46 under 35 U.S.C. § 103(a), and the rejection of claims 1-20, 29-30, 35-38, and 41 under 35 U.S.C. § 103(a), should all be reversed.

Respectfully Submitted,

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